

Application No.: 09/288,943

Amendment dated: 10/16/03

Reply to Office Action mailed: July 29, 2003

Remarks/Arguments

The rejection of Applicant's claim 41 under 35 U.S.C. 103(a) as unpatentable over U.S. Patent 5,630,590 issued January 9, 1998 issued to Bouchard, et al, (Bouchard, et al) is noted.

As Applicant has repeatedly pointed out, Applicant has claimed substantially the same invention as claimed in Bouchard, et al and has requested that an Interference be declared between Applicant's claims and Bouchard, et al .

It is simply pointed out with respect to this rejection that Applicant has previously stated in an Amendment in response to an Office Action dated July 18, 2000 in the subject application that claim 41 was originally filed in U.S. Serial No. 08/656,564 filed May 31, 1996. Accordingly, this claim was co-pending with Bouchard, et al . No reason is clear to Applicant why an Interference was not declared during this period of co-pendency, especially since all claims in U.S. Serial No. 08/656,564 were allowed April 15, 1997. Applicant has continued to assert throughout the prosecution of U.S. Serial No. 08/656,564, U.S. Serial No. 08/892,788 and the subject application that Applicant intends to attempt to provoke an Interference with Bouchard, et al .

It is respectfully submitted that Applicant has at all times been entitled to make this claim. It is submitted that this claim claims the same invention as set forth in Bouchard, et al. It is again respectfully requested that an Interference be declared.

Accordingly, it is respectfully requested that the rejection of Applicant's claims under 35 U.S.C. 103 as unpatentable over Bouchard, et al be withdrawn and that an Interference be declared between Bouchard, et al and the subject application.

The rejection of Applicant's claim 41 over U.S. Patent 5,308,088 issued May 3, 1994 to Atkinson, et al (Atkinson, et al) is respectfully traversed and reconsideration is respectfully requested.

Atkinson, et al has been discussed extensively in the Amendment filed May 23, 1996. As noted therein, Atkinson, et al discloses the use of a brush seal in gas turbine

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engines for use in the aircraft industry (column 1, lines 10-15). Atkinson, et al also discloses that rotating labyrinth seals have been used frequently in the past to close leakage gaps and that another candidate for doing so is a brush seal. It is further disclosed by Atkinson, et al that the seals used typically sealingly engage the surface of the nonrotary members. It is also disclosed in Atkinson, et al that brush seals may not be useable in all instances because of pressure and clearance considerations and the like.

Accordingly, as discussed in the previous amendment, Applicant has disclosed many reasons why brush seals have not been used previously in stationary power plant turbines. A primary reason is that it is believed that the nonrotary surfaces that would be contacted by a brush seal in this application are of a composition such that the brush seal could damage the nonrotary surfaces. It is also disclosed that it is generally considered that treating these surfaces to render them harder or more resistant to contact with a brush is prohibitively expensive. Therefore there are sufficient reasons why those skilled in the art have not considered the use of brush seals at this point of the apparatus to be obvious.

There is no suggestion in Atkinson, et al that brush seals should be used in such an application. As noted previously, Atkinson, et al discloses a specific location of the brush seal in a gas turbine engine (column 2, lines 40-42). Use of a brush seal in a turbine engine does nothing to suggest the use of a brush seal in an intermediate area between an air compressor and the turbine engine.

Further the Applicant requires that suitable spacing be available around the brush so that some air leakage can occur. This is in direct contrast to Atkinson, et al who requires sealing engagement. The tolerance permissible with respect to the back plate in Applicant's claimed invention is not a concern since the fluctuation in the space between the nonrotary member and the back plate is not considered sufficient to result in problems with the nonrotary member contacting the back plate.

Applicant's claimed invention is directed to the use of a brush seal that has a spacing from the nonrotary member in an application that is contraindicated by the state of the art at the time of the application and that is contrary to the actual disclosure in Atkinson, et al as to the engagement of the brush with the nonrotary member. It is believed clear that this reference does nothing to show or suggest Applicant's claimed invention. As more fully

explained in the previous amendment, there are other differences between Atkinson, et al and Applicant's claimed invention.

Accordingly, it is respectfully submitted that Atkinson, et al does not show or suggest Applicant's claim 41 under 35 U.S.C. 103(a). Therefore, it is respectfully requested that this rejection be withdrawn.

The rejection of Applicant's claims 42-52 under 35 U.S.C. 103(a) as unpatentable over Bouchard, et al is noted. As previously indicated, Applicant considers that Applicant has claimed the same invention shown in Bouchard, et al and has requested an Interference. It is again respectfully requested that this Interference be declared.

The rejection of Applicant's claims 32-40 under 35 U.S.C. 135(b) as not being made prior to one-year from the date on which the U.S.C. Patent 5,630,590 was granted is obviated by cancellation of claims 32-40.

The response to the arguments has been reviewed. Particularly with respect to the comments regarding claim 41 to the effect that the inventions are different, the Applicant must respectfully disagree. Even a casual observation of Applicant's and Bouchard, et al's Figures indicate that both brush seals are used with the labyrinth seals previously present and that both show a spacing between the brushes and the nonrotary members. Bouchard, et al discloses at column 4, lines 37-42, that the knife edge seals despite being worn may have some residual sealing effectiveness. Their retention is for the primary purpose of avoiding the risk of damaging the barrel. Applicant similarly leaves the labyrinth seals in place when brush seals are used. This is not a significant difference in the inventions claimed.

Accordingly, no affidavit is proper under MPEP 706.02(b) since such an affidavit is required to demonstrate the differences between the inventions.

With respect to the comments regarding Atkinson, et al, please note that the distinctions pointed out by the Applicant are not limited to limitations found in the preamble. Particularly, please note that Atkinson, et al does not disclose a brush seal for use between a compressor and a barrel enclosing an area downstream of the compressor. As noted previously, Atkinson, et al discloses a brush seal that is apparently located in the turbine itself. Accordingly, Atkinson, et al does not disclose a brush seal for restricting air passage into the chamber from the compressor. Further Atkinson, et al does not disclose that the

*teaching
does not need physical embodiment*

brush should be placed at a spacing from the land region of the rotor. The seals of Atkinson, et al are placed at a different position.

Further it is noted that with respect to new claim 42, this claim requires a labyrinth seal in step (d). No such labyrinth seals are shown in Atkinson, et al. }

With respect to the paragraph regarding Applicant's position that the brush seals have not been applied to existing large power plant turbines and that the location of the seal has not been previously known do not distinguish Applicant's claims from Atkinson, et al., the Examiner disagreement is noted. It is respectfully submitted that knowledge in the art that the brush seals are not useful in existing large plant turbines and that brush seals are useful in the location in which Applicant has claimed use of the seals is a significant factor in the determination of obviousness and has not been suggested in any way by Atkinson, et al. The Examiner's position is that the obviousness of a reference is what it would teach one skilled in the art and not whether it is structured to be bodily substituted in the basic reference structure. This distinction is not fully understood since it would appear that these differences would teach one skilled in the art in the opposite direction from the invention made by the Applicant. With respect to the basic reference structure, for instance in Atkinson, et al, there is no suggestion that this device should be substituted into any other location since there are numerous references in Atkinson, et al that the specific requirements for brush seals may, in some instances, render their use impractical. }

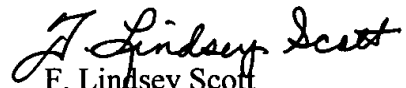
The comments with respect to claims 32-40 regarding the filing date is noted. It is respectfully submitted that no such considerations apply to Applicant's current claims 42-52 and it is respectfully submitted that these claims are entitled to a date that makes them co-pending with Bouchard, et al before the Patent Office.

It is believed clear, in view of the materials previously submitted, that Applicant's claims 41-52 are entitled to a filing date prior to the issue date of Bouchard, et al. Accordingly, an Interference should be declared with respect to these claims.

In view of the foregoing remarks and arguments, it is respectfully submitted that none of Applicant's presently pending claims have been shown or suggested under 35 U.S.C. 103 by any of the references applied by the Examiner, that all of Applicant's claims currently pending are free of any objections under 35 U.S.C. 135(b) and that Applicant's claims are in

condition for allowance and in condition for the declaration of an Interference with U. S. Patent 5,630,590 and such is respectfully requested.

Respectfully submitted,


F. Lindsey Scott
Registration No. 26,230
972.599.2888
Attorney for Applicant

2329 Coit Road
Suite B
Plano, TX 75075-3796